Abstract

An optical switch includes at least one input port for receiving a plurality of channel wavelengths of an optical signal and a plurality of output ports. A plurality of wavelength selective elements are also provided, which each select a channel wavelength from among the plurality of channel wavelengths received at the input port. A plurality of optical elements are respectively associated with the plurality of wavelength selective elements. Each of the optical elements direct one of the selected channel wavelengths, which are selected by the associated wavelength selective element, to any one of the output ports independently of all other channel wavelengths and with a selectively variable degree of attenuation. The switch also includes a controller for adjusting a configuration of the optical elements to provide the channel wavelengths with the selectively variable degree of attenuation.